

IN THE CLAIMS:

Please amend claims 1-7, 16, 25, 26, 35, 37, and 51 as follows:

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1. (Amended) A semiconductor wafer, comprising:
a plurality of pits in the semiconductor wafer, the pits being arranged in a digital information-providing pattern other than a bar code pattern which is readable before, during and after completion of processing on the wafer.

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2. (Amended) The wafer according to claim 1, wherein a readability of the pits is provided by the pits having a detectable contrast with respect to surrounding portions of the wafer.

3. (Amended) The wafer according to claim 2, wherein the pits are arranged in a region of the wafer, wherein the contrast is provided by an ion implant in the region.

4. (Amended) The wafer according to claim 3, wherein the ion implant is carried out to an implant depth and the pits have a pit depth greater than the implant depth.

5. (Amended) The wafer according to claim 2, wherein the pits are arranged in a region of the wafer, wherein the detectable contrast is provided by a depth of the pits.

6. (Amended) The wafer according to claim 1, wherein the digital information providing-pattern comprises at least one of a binary pattern and an alphanumeric pattern.

7. (Amended) The wafer according to claim 1, wherein the digital pattern comprises long and short pits.

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16. (Amended) The wafer according to claim 1, wherein the pits have a width of at most approximately 1 mm and a depth of at most approximately 1 mm.

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25. (Amended) The wafer according to claim 24, wherein each group of pits has a width of approximately 2 mm and a height of approximately 5 mm.

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26. (Amended) The wafer according to claim 24, wherein adjacent groups of pits are separated from each other by a distance of approximately 2 mm.

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35. (Amended) The wafer according to claim 33, wherein adjacent pits in a line or in adjacent lines are separated by a distance of at least 5 μ m.

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37. (Amended) A method of encoding information on a semiconductor wafer, comprising:

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converting the information into a digital form other than a bar code pattern; and forming pits readable before, during and after completion of processing on the wafer corresponding to the digital form of the information in the semiconductor wafer.

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51. (Amended) A system for encoding information on a semiconductor wafer and reading the information, the system comprising:

a plurality of pits formed on the semiconductor wafer in a digital information-providing pattern other than a bar code pattern,

wherein the digital information-providing pattern is readable before, during and after completion of processing on the wafer; and

means for reading the information encoded by the pits.

Please add the following new claims 55-67:

55. (New) The semiconductor wafer according to claim 1, wherein the plurality of pits are simultaneously arranged in both the digital information-providing pattern and a human-readable pattern.

56. (New) The semiconductor wafer according to claim 1, wherein the digital information-providing pattern is a non-binary coded pattern, and the plurality of pits comprise pits having at least three different shapes.

57. (New) The semiconductor wafer according to claim 56, wherein the at least three different shapes include a circle, an oval, and a rectangle.

58. (New) The semiconductor wafer according to claim 1, wherein the digital information-providing pattern is a non-binary coded pattern, and the plurality of pits comprise a plurality of differently oriented oval pits as defined by an orientation of each of an associated major axis thereof.

59. (New) The semiconductor wafer according to claim 1, wherein the non-binary coded pattern is a quaternary-coded pattern.

60. (New) The method of claim 37, further comprising simultaneously arranging the pits to correspond both to the digital form and to a human-readable pattern.

61. (New) The system of claim 37, wherein said step of forming pits includes forming pits having at least three different shapes.

62. (New) The system of claim 37, wherein said step of forming pits includes forming pits in the shape of a circle, an oval, and a rectangle.

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63. (New) The system of claim 37, wherein said step of converting the information into the digital form includes converting the information into a non-binary digital form, and said step of forming pits includes forming pits in a plurality of differently oriented oval pits as defined by an orientation of each of an associated major axis thereof.

64. (New) The system of claim 51, wherein the plurality of pits are simultaneously formed in the digital information-providing pattern and in a human readable form.

65. (New) The method of claim 37, further comprising scribing linear wafer sequence start notch along a longitudinal surface of a boule from which a plurality of semiconductor wafers are subsequently encoded and cut.

66. (New) The method of claim 65, further comprising scribing a plurality of essentially helically-shaped boule sequence notches along the longitudinal surface.

67. (New) The method of claim 37, further comprising scribing a plurality of essentially helically-shaped boule sequence notches along a longitudinal surface of a boule from which a plurality of semiconductor wafers are subsequently encoded and cut.